



National Aeronautics
and Space Administration

MAY 28, 1996
NRA 96-OSS-10

RESEARCH ANNOUNCEMENT

APPLIED INFORMATION SYSTEMS RESEARCH

A Research Announcement for the
Science Information Systems Program
Office of Space Science
National Aeronautics and Space Administration
Washington, DC 20546-0001

97-007368/VB

PROPOSALS DUE:

AUGUST 28, 1996

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Applied Information Systems Research

**A Research Announcement for the
Science Information Systems Program**

**NASA Research Announcement
Soliciting Proposals
for Research in Information Systems
for the Period Ending
August 28, 1996**

**NRA 96-OSS-10
Issued: May 28, 1996**

**Office of Space Science
National Aeronautics and Space Administration
Washington, DC 20546**

APPLIED INFORMATION SYSTEMS RESEARCH

This NASA Research Announcement (NRA) solicits proposals for applying computer science and information systems technology to manage, access, visualize, and analyze very large, complex, multiparameter data sets associated with conducting NASA's space science research programs.

The nineties began a new era of NASA scientific research. In the last few years NASA has launched more science missions than in any similar period in recent history. Researchers now have the opportunity to observe the universe from NASA's Astronomical Great Observatories, send instrumented spacecraft to every major solar system body, and obtain multispacecraft measurements of the generation and transport of solar energy and its interaction with the terrestrial environment. These missions will obtain large volumes of new data with unprecedented temporal, spectral, and spatial resolution. Computer and information systems technology will play a critical, and often enabling, role for dealing with the massive volumes of data and converting it into meaningful information leading to scientific knowledge.

The purpose of the Applied Information Systems Research program is to apply advanced computer and information science and technology to enhance the process of performing space science investigations. Appropriate areas of interest include:

- High Performance Computing and Networking,
- Scientific Data Analysis and Visualization,
- Scientific Data Storage and Management, and
- Software Technology including World Wide Web tools.

Please note in particular that this NRA is confined to the science program themes organized within the Office of Space Science:

- Structure and Evolution of the Universe,
- Astronomical Search for Origins and Planetary Systems,
- Exploration of the Solar System, and
- The Sun-Earth Connection.

The Applied Information Systems Research program no longer supports the Mission To Planet Earth nor Microgravity and Life Sciences research disciplines.

Proposals should capitalize on either existing research and development activities or tools and capabilities that are available commercially or within the public domain which can be adapted for application in the NASA space science data environment with a minimum of new development. We encourage original, innovative proposals for applying current information systems technology that can be made more generally applicable across multiple space science disciplines.

Participation in this program is open to all categories of organizations, both domestic and foreign: industry, educational institutions, nonprofit organizations, NASA centers, and other Government agencies. Joint proposals that demonstrate effective partnerships of senior computer science and applications investigators with senior space science investigators are encouraged.

Investigators may submit proposals at any time until August 28, 1996 after which peer review panels will evaluate the proposals. Selection of successful proposals is planned by November 1, 1996. Total funding for 20-25 new awards will be approximately three million dollars per year.

The Appendices to this Announcement include further details relevant to this program. Appendix A includes more detailed technical and programmatic information on the research areas of interest.

Appendix B contains the basic guidelines for responding to NASA Research Announcements. Appendix C contains the schedule for this NRA, proposal evaluation criteria, specific instructions for electronic submission, and other amendatory guidance to Appendix B applicable only to this NRA. Appendix D has the standard proposal format, including cover page, proposal summary forms, budget forms, and required certifications. Please use identifier number NRA-96-OSS-10 when making an inquiry regarding this Announcement.

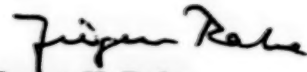
NASA will provide this NRA and its appendices through anonymous file-transfer-protocol from Internet host [ftp.hq.nasa.gov](ftp://ftp.hq.nasa.gov). The command "ftp ftp.hq.nasa.gov" should be used from the host machine. The user will then be prompted for a user name (use "anonymous") and a password (please use your own host name). ASCII, Postscript, and Microsoft Word files for the NRA, all its Appendices, and required forms are located in the directory "/pub/oss/aisrpnra/96-OSS-10." A file named "README.txt" resides in this directory and gives detailed instructions for obtaining the necessary files electronically. In addition, Web submission of the Cover Page is mandatory and provides a postscript version of the Cover Page for each proposal. The URL for the Web tool is http://www.Code_S_Proposals.hq.nasa.gov/. Proposers without access to Internet are advised to contact the address listed below for proposal submission in order to submit their Cover Page information.

Submit Proposals To:	Applied Information Systems Research Program (AISRP) Support Office Jorge Scientific Corporation 400 Virginia Avenue, SW, Suite 700 Washington DC 20024 Tel: 202-554-2775
Submit Proposals By:	August 28, 1996
Number of Required Proposals:	10 copies + signed original
Selecting Official:	Director, Research Program Management Division Office of Space Science NASA Headquarters
Anticipated Selection Date:	November 1, 1996
Obtain NRA and Appendices Electronically via "anonymous ftp" From:	ftp.hq.nasa.gov
Web Submission URL for Cover Pages:	http://www.Code_S_Proposals.hq.nasa.gov/
Obtain Additional Information and NRA Hard Copies From:	Mr. Joseph Bredekamp Office of Space Science Code SR NASA Headquarters Washington, DC 20546-0001 U.S.A. Telephone: (202) 358-2348 E-mail: jbredkamp@hq.nasa.gov

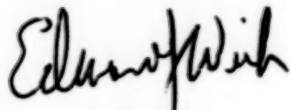
Your interest and cooperation in participating in the Applied Information Systems Research program are appreciated.



Alan N. Bunner
Science Program Director
Structure and Evolution of the Universe
Office of Space Science



Jurgen H. Rahe
Science Program Director
Solar System Exploration
Office of Space Science



Edward J. Weijer
Science Program Director
Astronomical Search for Origins
and Planetary Systems
Office of Space Science



George L. Withbroe
Science Program Director
The Sun-Earth Connection
Office of Space Science

Enclosure

List Of Appendices And Enclosures

Appendices are available via anonymous ftp from ftp.hq.nasa.gov or by hard copy (contact J. Bredekamp at (202) 358-2348, e-mail: jbredekamp@hq.nasa.gov). Hard copy is available only on request from proposers who do not have access to the Internet.

Appendix A - Program Description

Appendix B - Guidelines for Responding to NASA Research Announcements for Solicited Basic Research Proposals

Appendix C - Additional Guidelines for the Preparation of Proposals in Response to this NRA

Appendix D - Forms for Use in Preparing Proposals in Response to this NRA:

Standard Cover Pages

Summary Budget Form

Additional, Detailed, Budget Form

Current and Pending Federal Support Form

Certification Forms (Drug-Free Workplace, Debarment and Suspension, and Lobbying)

are all available through the World Wide Web site.

APPLIED INFORMATION SYSTEMS RESEARCH

1. Program Description

The NASA Office of Space Science (OSS) conducts space science research through sponsorship of scientific programs, including flight projects, implemented at the NASA Field Centers. OSS scientific themes include the Structure and Evolution of the Universe, Solar System Exploration, the Sun-Earth Connection, and the Astronomical Search for Origins of and Planetary Systems.

The Science Information Systems Program supports all the OSS science disciplines by providing the globally distributed research community with data communications networks, data archives, and high performance scientific computing facilities. The program also conducts information systems research to apply new developments in computer science and information systems technology to improve and enhance ongoing support for OSS science programs. The scope of this program includes:

- applied research in areas such as scientific visualization, algorithms and computational methods, data storage technologies, and access methods,
- technology development of generic tools and capabilities, such as Web tools and applications, and
- technology transfer--including testbed efforts to evaluate advanced technologies for application and appropriateness in the NASA environment, technology demonstrations, and insertions.

As part of its Science Information Systems activities, OSS is sponsoring this Applied Information Systems Research NRA. The major goals of this Research Announcement are to:

- promote collaboration of senior computer science and applications investigators with senior space science investigators to apply state-of-the-art information systems research in areas relating to the dramatically increasing complexity and volume of space science data being received in this decade. Investment in innovative application of emerging technologies is critical to ensure that space scientists will have timely and efficient access to these large data sets;
- increase the scientific return on research within and across OSS science disciplines by making advanced analysis tools available to researchers, so as to allow them to conduct their research more efficiently and effectively; or
- capitalize on existing techniques, technologies, and tools, including those available commercially and within the public domain, which may be adapted for, and integrated within, the NASA environment.

An additional incentive to participants will be opportunities for expanded commercialization. That is, products developed under this program will potentially be attractive to broader research and commercial market segments. Note that it is **not** a purpose or objective of this NRA to provide funds specifically for the development of new or improved commercial products.

Besides the program goals stated above, this program provides a continuing process for promoting communication between NASA and external organizations regarding information systems

technology and applications, including research areas of interest to NASA and technological innovations.

2. Areas Of Interest

NASA seeks proposals that offer solutions to information systems issues associated with the expected growth of data from space science missions of the 1990's. The demonstration of workable systems and solutions may be performed on existing OSS-sponsored information systems and data archives.

The research areas of interest considered under this solicitation include:

- High Performance Computing and Networking,
- Scientific Data Analysis and Visualization,
- Scientific Data Storage and Management, and
- Software Technology including World Wide Web tools.

Other related areas will be considered as well. For example, techniques such as genetic algorithms, chaos, neural networks, or expert systems could be applied in the above areas. Enhancements to available, current, and adequate commercial or public domain programs or module libraries to process and archive NASA data are preferable to developing an entire new program with many features similar to those already available. In the scientific visualization area, for example, commercial programs such as AVS, Explorer, and IDL are available, as are public domain programs such as the various offerings from the National Center for Supercomputer Applications. These capabilities should be built upon, not duplicated. However, applied research is desired where no adequate capability exists (see Appendix C, Section 9).

In addition, proposers are encouraged to:

- propose original, innovative applications of information systems technology that will be more generally applicable across multiple space science disciplines;
- capitalize on current research and development activities, utilizing existing information systems tools, techniques, and technologies (including those available commercially and in the public domain) which, with a minimum of development, may be applied to NASA-unique data environments; or
- demonstrate evidence of resource sharing and commitment, i.e., a vested interest in the outcome, with or without Government funding.

3. Scope of the Program

Participation in this program is open to all categories of organizations, both domestic and foreign: industry, educational institutions, nonprofit organizations, NASA Centers, and other Government agencies.

NASA plans to fund 20-25 proposals from a total operating budget of up to three million dollars per year. This is the third solicitation of such proposals and future announcements are planned at 18 month intervals.

In keeping with NASA's general policy regarding longer-term support for NRA awards, proposals may be submitted for periods of up to three years (a base year with two priced option years). Funding for accepted proposals will be provided on a yearly basis with continued funding dependent upon the availability of funds, continued relevance to this Research Announcement, and favorable performance evaluations.

This program includes annual workshops for which Principal Investigators from each project are expected to participate, in addition to individual project management reporting requirements. These workshops will be held with the purpose of:

- reviewing individual project's activities and progress,
- promoting the exchange of information and ideas between groups, and
- providing a forum for communicating current and planned NASA information systems activities.

Further information on previous workshops is available at Universal Resource Locator (URL) <http://www.hq.nasa.gov/office/oss/aistr/workshops.html> on the World Wide Web.

4. Software Tools and Data Management Applications

All proposed software development should meet the modern programming criteria of being:

- platform-independent or at least portable to computer hardware systems usually used by the targeted scientific community;
- written using an object-oriented (e.g., C++) programming language, or using structured programming techniques in a popular high-level language; and
- documented sufficiently well to allow effective use of the product by space scientists with computer hardware in common use by the targeted scientific community.

The resulting software and documentation must be made available free of charge to the scientific community at the end of the award period. If the proposal is to create a scientific visualization, data management, or parallel processing application or module, then the proposal must adequately show that a fully demonstrated and documented product can be developed by the end of the project. The end products of the award must include a complete description of the application, as well as user's manuals, electronic copies of sample data, associated applications software, and other relevant materials. If the proposal calls for the establishment of capabilities dealing with data exchanges, then adherence to international, national, and NASA standards accepted by the target community is required.

5. Quality Control

Proposals must clearly describe how they plan to assure the quality of their final products and how they plan to obtain external scientific evaluation before delivery. If the proposal concerns models or data from a computational or archive center, then the proposal must describe how the effort relates to services performed by that computational or archive center (e.g., whether the proposed effort complements or improves on data products and services available at the center). These plans will be assessed as part of the proposal peer review and the final selection at NASA Headquarters.

6. Documentation and Delivery

Adequate documentation associated with the software must be made available to the scientific community, so that they may effectively use the product, at the end of the award period. The documentation must include:

- a complete user's manual, including graphical or command syntax and semantics, data representations, and examples of use,
- a complete operations manual with parameter definitions and limits, and input and output examples,
- a complete set of installation instructions and description of any special operational requirements,
- full internal documentation of the software, including a full source listing of the software and sufficient contextual comments to allow the program to be understood, and
- a test data set with which the software can be exercised and that will allow the user to demonstrate that it is properly functioning.

The internal documentation should include a list of all subroutines with definitions of their interface parameters, explanation of their internal variables and constants, and a description of their algorithm. By following good practices in the writing of the software, not more than ten percent of the total effort should be needed to produce the required documentation.

However, in the case of software developed to serve as a component of OSS-sponsored data systems, then proposers must arrange with the managers of those systems to define the documentation needed to assure that the developed software can be properly integrated. The proposal must specify this list of documentation and other deliveries to those systems. Software proposed for integration into OSS-sponsored systems must adhere to the data format, documentation, and delivery requirements of those systems. The developer of software for OSS-sponsored systems must provide the cognizant system manager with evidence that the software was integrated properly into the system. Consequently, no separate delivery of software or documentation to NASA will be required in these cases.

To facilitate the distribution of the software, its registration in a NASA-maintained directory will be required (e.g., The National Space Science Data Center). All software, data, and their associated documentation must include an electronically readable version acceptable to the cognizant data center.

7. Guidelines for Foreign Participation

Proposals from non-U.S. entities should not include a cost plan. The respective foreign government agency or funding/sponsoring institution (in that country from which the non-U.S. participant is proposing) must endorse their proposals and U.S. proposals that include non-U.S. participation. Such endorsement should indicate that:

- the proposal merits careful consideration by NASA, and
- sufficient funds will be made available by the respective foreign government agency or funding/sponsoring institution to undertake the activity as proposed, if the proposal is selected by NASA.

Only one copy of each proposal and the letters of endorsement are to be forwarded to the NASA International Relations Division. The required number of copies of the proposal that is cited in the call for proposals are to be forwarded to the designated action office.

Please forward to the NASA International Relations Division a copy of the proposal, along with the Letter of Endorsement, to:

Ms. Shiron Gaines
NRA 96-OSS-10
International Relations Division
Code IRD
National Aeronautics and Space Administration
Washington, DC 20546-0001
U.S.A.

All proposals must be typewritten in English. All non-U.S. proposals will undergo the same evaluation and selection process as those originating in the U.S. Non-U.S. proposals, and U.S. proposals that include non-U.S. participation, must follow all other guidelines and requirements described in this NRA.

All proposals must be received before the established closing date. In exceptional situations, where endorsement is not possible before the announced closing date, sponsoring non-U.S. agencies may forward a proposal, without endorsement, to the International Relations Division at the above address. In such cases, however, please advise the NASA International Relations Division when to expect a decision on endorsement.

The NASA Office of Space Science will contact successful and unsuccessful proposers directly by letter, with copies to the sponsoring government agency.

Should a non-U.S. proposal or a U.S. proposal with non-U.S. participation be selected, the NASA International Relations Division will arrange with the non-U.S. sponsoring agency for the proposed participation on a no-exchange-of-funds basis, in which NASA and the non-U.S. sponsoring agency will each bear the cost of discharging their respective responsibilities. Depending on the nature and extent of the proposed cooperation, these arrangements may entail:

- a letter of notification by NASA, and/or
- an exchange of letters between NASA and the sponsoring governmental agency.

8. Further Information

Address questions regarding proposal preparation and submission, policies, evaluation procedures, and future NRAs to the address given below. After selection of proposals and notifications of acceptance or rejection, all management issues of this program such as budget matters and future-year funding of multiyear awards, will be handled by:

Mr. Joseph Bredekamp
Office of Space Science
Code SR
NASA Headquarters
Washington DC 20546-0001
E-Mail: jbredekamp@hq.nasa.gov
Telephone: (202) 358-2348

Background information on the Applied Information Systems Research program and NASA data centers may be found on the World Wide Web at the following Universal Resource Locator address:

<http://www.hq.nasa.gov/office/oss/aisr/aisrp.html>

Technical questions regarding the public domain data sets of OSS should be addressed to the appropriate points of contact at the respective data center. Additional information is available from the NASA Master Directory at the National Space Science Data Center (NSSDC) at:

<http://nssdc.gsfc.nasa.gov/nmd/nmd.html>

Instructions for Responding to NASA Research Announcements for Solicited Basic Research Proposals

(June 1995)

1. Foreword

a. These instructions apply to "NASA Research Announcements." The "NASA Research Announcement (NRA)" permits competitive selection of research projects in accordance with statute while preserving the traditional concepts and understandings associated with NASA sponsorship of research.

b. These instructions are Appendix I to 1870.203 of the NASA Federal Acquisition Regulation Supplement.

2. Policy

a. Proposals received in response to an NRA will be used only for evaluation purposes. NASA does not allow a proposal, the contents of which are not available without restriction from another source, or any unique ideas submitted in response to an NRA to be used as the basis of a solicitation or in negotiation with other organizations, nor is a preaward synopsis published for individual proposals.

b. A solicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request; however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act.

3. Purpose

These instructions supplement documents identified as "NASA Research Announcements." The NRAs contain programmatic information and certain requirements which apply only to proposals prepared in response to that particular announcement. These instructions contain the general proposal preparation information which applies to responses to all NRAs.

4. Relationship to Award

a. A contract, grant, cooperative agreement, or other agreement may be used to accomplish an effort funded in response to an NRA. NASA will determine the appropriate instrument.

b. Grants are generally used to fund basic research in educational and nonprofit institutions, while research in other private sector organizations is accomplished under contract. Contracts resulting from NRAs are subject to the Federal Acquisition Regulation and the NASA FAR Supplement (NHB 5100.4). Any resultant grants or cooperative agreements will be awarded and administered in accordance with the NASA Grant and Cooperative Agreement Handbook (NHB 5800.1).

5. Conformance to Guidance

a. NASA does not have mandatory forms or formats for responses to NRAs; however, it is requested that proposals conform to the guidelines in these instructions. NASA may accept proposals without discussion; hence, proposals should initially be as complete as possible and be submitted on the proposers' most favorable terms.

b. To be considered responsive, a submission must, at a minimum, present a specific project within the areas delineated by the NRA; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to legally bind the submitting organization; not merely offer to perform standard services or to just provide computer facilities or services; and not significantly duplicate a more specific current or pending NASA solicitation.

6. NRA-Specific Items

Several proposal submission items appear in the NRA itself: the unique NRA identifier; when to submit proposals; where to send proposals; number of copies required; and sources for more information. Items included in these instructions may be supplemented by the NRA.

7. Proposal Contents

a. The following information is needed to permit consideration in an objective manner. NRAs will generally specify topics for which additional information or greater detail is desirable. Each proposal copy shall contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

b. Transmittal Letter or Prefatory Material.

(1) The legal name and address of the organization and specific division or campus identification if part of a larger organization;

(2) A brief, scientifically valid project title intelligible to a scientifically literate reader and suitable for use in the public press;

(3) Type of organization: e.g., profit, nonprofit, educational, small business, minority, women-owned, etc.;

(4) Name and telephone number of the Principal Investigator and business personnel who may be contacted during evaluation or negotiation;

(5) Identification of other organizations that are currently evaluating a proposal for the same efforts;

(6) Identification of the NRA, by number and title, to which the proposal is responding;

(7) Dollar amount requested, desired starting date, and duration of project;

(8) Date of submission; and

(9) Signature of a responsible official or authorized representative of the organization, or any other person authorized to legally bind the organization (unless the signature appears on the proposal itself).

c. Restriction on Use and Disclosure of Proposal Information.

Information contained in proposals is used for evaluation purposes only. Offerors or quoters should, in order to maximize protection of trade secrets or other information that is confidential or privileged, place the following notice on the title page of the proposal and specify the information subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information contained in proposals will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

Notice

Restriction on Use and Disclosure of Proposal Information. The information (data) contained in [insert page numbers or other identification] of this proposal constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided, however, that in the event a contract (or other agreement) is awarded on the basis of this proposal the Government shall have the right to use and disclose this information (data) to the extent provided in the contract (or other agreement). This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

d. Abstract.

Include a concise (200-300 word if not otherwise specified in the NRA) abstract describing the objective and the method of approach.

e. Project Description.

(1) The main body of the proposal shall be a detailed statement of the work to be undertaken and should include objectives and expected significance; relation to the present state of knowledge; and relation to previous work done on the project and to related work in progress elsewhere. The statement should outline the plan of work, including the broad design of experiments to be undertaken and a description of experimental methods and procedures. The project description should address the evaluation factors in these instructions and any specific factors in the NRA. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described. Subcontracting significant portions of a research project is discouraged.

(2) When it is expected that the effort will require more than one year, the proposal should cover the complete project to the extent that it can be reasonably anticipated. Principal emphasis should be on the first year of work, and the description should distinguish clearly between the first year's work and work planned for subsequent years.

f. Management Approach.

For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and arrangements for ensuring a coordinated effort should be described. Intensive working relations with NASA field centers that are not logical inclusions elsewhere in the proposal should be described.

g. Personnel.

The Principal Investigator is responsible for supervision of the work and participates in the conduct of the research regardless of whether or not compensated under the award. A short biographical sketch of the Principal Investigator, a list of principal publications and any exceptional qualifications should be included. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project. Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity. Universities should list the approximate number of students or other assistants, together with information as to their level of academic attainment. Any special industry-university cooperative arrangements should be described.

h. Facilities and Equipment.

(1) Describe available facilities and major items of equipment especially adapted or suited to the proposed project, and any additional major equipment that will be required. Identify any Government-owned facilities, industrial plant equipment, or special tooling that are proposed for use.

(2) Before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already within the organization is a feasible alternative. Where such arrangements cannot be made, the proposal should so state. The need for items that typically can be used for research and non-research purposes should be explained.

i. Proposed Costs.

(1) Proposals should contain cost and technical parts in one volume: do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiable direct costs; and indirect costs. List salaries and wages in appropriate organizational categories (e.g., Principal Investigator, other scientific and engineering professionals, graduate students, research assistants, and technicians and other non-professional personnel). Estimate all manpower data in terms of man-months or fractions of full-time.

(2) Explanatory notes should accompany the cost proposal to provide identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including date of most recent

negotiation and cognizant agency); and clarification of other items in the cost proposal that are not self-evident. List estimated expenses as yearly requirements by major work phases. (Standard Form 1411 may be used).

(3) Allowable costs are governed by FAR Part 31 and the NASA FAR Supplement Part 1831 (and OMB Circulars A-21 for educational institutions and A-122 for nonprofit organizations).

j. Security.

Proposals should not contain security classified material. If the research requires access to or may generate security classified information, the submitter will be required to comply with Government security regulations.

k. Current Support.

For other current projects being conducted by the Principal Investigator, provide title of project, sponsoring agency, and ending date.

l. Special Matters.

(1) Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, executive orders, or other current Government-wide guidelines.

(2) Proposers should include a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Identify the cognizant Government audit agency, inspection agency, and administrative contracting officer, when applicable.

8. Renewal Proposals

a. Renewal proposals for existing awards will be considered in the same manner as proposals for new endeavors. A renewal proposal should not repeat all of the information that was in the original proposal. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which support is desired. A description of any significant findings since the most recent progress report should be included. The renewal proposal should treat, in reasonable detail, the plans for the next period, contain a cost estimate, and otherwise adhere to these instructions.

b. NASA may renew an effort either through amendment of an existing contract or by a new award.

9. Length

Unless otherwise specified in the NRA, effort should be made to keep proposals as brief as possible, concentrating on substantive material. Few proposals need exceed 15-20 pages. Necessary detailed information, such as reprints, should be included as attachments. A complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments: their availability may be mentioned in the proposal.

10. Joint Proposals

a. Where multiple organizations are involved, the proposal may be submitted by only one of them. It should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made.

b. Where a project of a cooperative nature with NASA is contemplated, describe the contributions expected from any participating NASA investigator and agency facilities or equipment which may be required. The proposal must be confined only to that which the proposing organization can commit itself. "Joint" proposals which specify the internal

arrangements NASA will actually make are not acceptable as a means of establishing an agency commitment.

11. Late Proposals

A proposal or modification received after the date or dates specified in an NRA may be considered if the selecting official deems it to offer NASA a significant technical advantage or cost reduction.

12. Withdrawal

Proposals may be withdrawn by the proposer at any time. Offerors are requested to notify NASA if the proposal is funded by another organization or of other changed circumstances which dictate termination of evaluation.

13. Evaluation Factors

a. Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA's objectives, intrinsic merit, and cost.

b. Evaluation of a proposal's relevance to NASA's objectives includes the consideration of the potential contribution of the effort to NASA's mission.

c. Evaluation of its intrinsic merit includes the consideration of the following factors, none of which is more important than any other:

(1) Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.

(2) Offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposal objectives.

(3) The qualifications, capabilities, and experience of the proposed Principal Investigator, team leader, or key personnel critical in achieving the proposal objectives.

(4) Overall standing among similar proposals and/or evaluation against the state-of-the-art.

d. Evaluation of the cost of a proposed effort includes the realism and reasonableness of the proposed cost and available funds.

14. Evaluation Techniques

Selection decisions will be made following peer and/or scientific review of the proposals. Several evaluation techniques are regularly used within NASA. In all cases proposals are subject to scientific review by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house, others are evaluated by a combination of in-house and selected external reviewers, while yet others are subject to the full external peer review technique (with due regard for conflict-of-interest and protection of proposal information), such as by mail or through assembled panels. The final decisions are made by a NASA selecting official. A proposal which is scientifically and programmatically meritorious, but not selected for award during its initial review, may be included in subsequent reviews unless the proposer requests otherwise.

15. Selection for Award

a. When a proposal is not selected for award, and the proposer has indicated that the proposal is not to be held for subsequent reviews, the proposer will be notified. NASA will explain generally why the proposal was not selected. Proposers desiring additional information may contact the selecting official who will arrange a debriefing.

b. When a proposal is selected for award, negotiation and award will be handled by the procurement office in the funding installation. The proposal is used as the basis for negotiation.

The contracting officer may request certain business data and may forward a model contract and other information which will be of use during the contract negotiation.

16. Cancellation of NRA

NASA reserves the right to make no awards under this NRA and to cancel this NRA. NASA assumes no liability for canceling the NRA or for anyone's failure to receive actual notice of cancellation. Cancellation may be followed by issuance and synopsis of a revised NRA, since amendment of an NRA is normally not permitted.

Additional Guidelines for the Preparation of Proposals in Response to this NRA

Introduction

Proposals should follow the guidelines and instructions for responding to NRAs contained in Appendix B. The information contained in Appendix C augments and supersedes Appendix B and is applicable only to NRA-96-OSS-10.

The following amendments to these instructions are considered in effect for this Research Announcement.

- All proposals must be arranged according to the format in Appendix D of this NRA. The Cover Page may be obtained through the on line service explained in the body of this NRA and located at http://www.Code_S_Proposals.hq.nasa.gov/. All proposals must be endorsed in writing by the proposer's sponsoring institution; the Cover Page contains space for this endorsement.
- As shown in the NRA proposal format outline in Appendix D of this NRA, the proposal should contain a brief implementation plan for the proposed effort describing the practical value of the proposed product or technology and how it could be adapted to the NASA data environment. The plan should include milestones, tasks and deliverables, and associated delivery dates. This implementation plan supplements Appendix B, Section 7, "Proposal Contents."
- In addition to the instructions contained in Appendix B, Section 7i, "Proposed Costs," proposers are referred to the ftp site, <ftp.hq.nasa.gov>, </pub/oss/aisrpnra/96-OSS-10/>, for the Budget Summary and Certifications Forms (also see Appendix D). This site contains a model format for proposed budgets. Furthermore, Appendix D contains the Certification Regarding Drug Free Workplace Requirements and the Certification Regarding Debarment, Suspension, and Other Responsibility Matters required in all proposals. The Certification Regarding Lobbying is only required if the proposed cumulative budget is over \$100,000.
- Any non-NASA resources included in the proposed effort costs must be verified with a letter of endorsement signed by an authorized representative of the resource's organization(s). This letter of endorsement should be attached to the Cover Pages referenced in the first item above. The letter of endorsement should indicate the resources contributed and any conditions concerning the use of resources.
- Evaluation criteria, which replace those in Appendix B, are located in Appendix C, Section 9.
- Requests for a funding augmentation beyond the original committed level(s) of a currently existing Information Systems Research and Technology grant, contract, or RTOP (including the Applied Information Systems Research program) are considered new proposals. Such proposals must be prepared according to the guidelines given in Appendices B and C of this NRA and will be reviewed along with other proposals submitted in response to this NRA.

1. Proposal Format and Content

All proposals must have a Cover Page, which may be obtained through the on-line service explained in the body of this NRA and located at http://www.Code_S_Proposals.hq.nasa.gov/. All proposals must be endorsed, in writing, by the proposer's sponsoring institution. The Cover Page contains space for this endorsement.

When completing the forms, please note that, for proposals in response to NRAs, NASA recognizes only one Principal Investigator (PI) for each proposal. Other investigators are designated Co-Investigators (Co-I's), even if their responsibilities are comparable to that of the PI.

The proposer's sponsoring institution must endorse all proposals in writing. Only properly endorsed proposals are acceptable. The Cover Page contains space for this endorsement by an institutional representative authorized to legally bind the institution to perform the proposed effort. If substantial collaborations with other institutions are involved, then letters of endorsement should be submitted by the responsible officials from those institutions. Each endorsement letter should indicate agreement with the nature of the collaboration detailed in the proposal, which should be identified by title and date of submission. All endorsement letters should refer to the Applied Information Systems Research Program of the Office of Space Science.

Besides the Cover Page, proposals should contain a table of contents, a summary of the proposed science program, a scientific/technical section, a budget section, a statement of current and pending Federal support, and biographical sketches arranged according to the format in Appendix D. Proposals originating outside the United States do not require a budget section.

2. Page Limits

Proposals are expected to be written concisely in English to minimize the burden on the reviewers and to facilitate the overall evaluation process. The total length of the technical proposal, including all sections numbered 1-7 under the Table of Contents listed in Appendix D, but excluding the Cover Page, budget forms, etc., should not exceed 10 sheets of 8.5" x 11" paper, (i.e., a **maximum of 20 pages**) single- or double-spaced (point size 10 or larger, with 1-inch margins). Double-sided printing is encouraged.

Please note that review panels will schedule reviews based these page limits. Longer proposals will not be read in full.

To facilitate the recycling of shredded proposals after review, proposals should be submitted on plain, white paper only. This precludes the use of cardboard stock, plastic covers, colored paper, and binders such as 3-ring, GBC, spiral, plastic strips, etc.

3. Research Areas and Scientific Disciplines

Each proposal must be described as shown in Appendix D. The research area(s) involved, and the space science discipline(s) that will be investigated, must be indicated. Each proposal must identify one primary computer science/information system applications research area as shown by the highest percentage indicated. Secondary research areas may be shown also. NASA reserves the right to reassign a proposal to different primary or secondary research areas.

The research areas are:

- High Performance Computing and Networking,

- Scientific Data Analysis and Visualization,
- Scientific Data Storage and Management, and
- Software Technology including World Wide Web tools.

Related areas to those identified above will be considered as well. For example, techniques such as artificial intelligence, chaos, neural networks, or expert systems could be applied in the above areas. If so proposed, please indicate on the Cover Page which area of application is closest.

4. Guidelines for the Scientific/Technical Section of Proposals

The scientific/technical section should contain a brief summary, followed by a description of the scientific and technical objectives of the proposed investigation, the approach, and the expected results. Proposals must include a brief implementation plan for the proposed effort with milestones and completion or delivery dates.

5. Guidelines for the Budget Section of Proposals

The budget section of the proposals should include a budget breakdown for each year of the proposed work, not to exceed 3 years (i.e., 36 months).

The budget summary should be presented in the Budget Summary Form enclosed in Appendix D. These forms will be used by the Government to evaluate costs as to reasonableness, allowability, and allocability. The total budget amount should also be entered in the proposal summary pages as shown in Appendix D.

If collaborations with Co-I's who are at institutions different from that of the PI are involved, and if those Co-I's anticipate support, the budget total of each participating institution should be listed in the Proposal Budget Summary of the PI. Details of the budgets of such participating institutions should be provided separately.

Direct labor costs should be segregated by titles or disciplines (e.g., PI, Co-I) with estimated hourly or monthly rates, number of months, and total dollar amounts for each. Indirect costs should be explained to an extent that will allow the Government to understand the basis of the estimates.

Each significant category regarding other costs should be detailed, explained, and substantiated. For example, proposals for equipment purchases should specify the type of equipment, number of units, and unit cost. Requested travel allowances should include the destination, number of travelers, number of days, and the total cost per trip. Note that an annual trip by the PI is expected to the three-day program workshop (discussed in Appendix A, Section 3), typically held in Boulder, CO, during the summer.

6. Current and Pending Federal Support

Following the budget section, the proposal must contain a summary of current and pending Federal support of all projects with substantial involvement of the PI and each Co-I for whom support is requested. The format appears in Appendix D. The information content must include: source of support, the project title with a grant or contract number, the award amount by Government fiscal year, the total award amount, the award period, and the level of effort in person-months.

7. Biographical Sketches

A brief biographical sketch referencing related work should be included, along with citations of the most relevant recent scientific publications covering the past five years. The biographical sketch and publications list should not exceed one page per PI or Co-I.

8. Proposal Quantity, Mailing Address, and Due Date

The original and ten copies of the proposal should be sent to the following address:

Applied Information Systems Research Program (AISRP) Support Office
Jorge Scientific Corporation
400 Virginia Avenue, SW, Suite 700
Washington DC 20024
(202) 554-2775

Proposals should be sent in time to arrive at the above address on or before the deadline given in the letter of solicitation of this NRA. Late proposals may be returned without being reviewed. The next announcement is planned for a year and a half after the current cycle.

If you wish to print out the NRA, please obtain the files via anonymous ftp from [ftp.hq.nasa.gov](ftp://ftp.hq.nasa.gov). The command "`ftp ftp.hq.nasa.gov`" should be used from the host machine. The user will then be prompted for a user name (use "anonymous") and a password (please use your own host name). The required forms are located in the directory "`/pub/oss/aisrpnra/96-OSS-10`." In addition, a file named "README.txt" resides in this directory.

In order to avoid errors in data entry and to increase the efficiency of proposal management, it is required that all proposers with access to the World Wide Web use the Cover Page form generator provided. The URL address for this tool is http://www.Code_S_Proposals.hq.nasa.gov/. Once a prospective proposer has completed the form, a Cover Page will be generated and downloaded to you. Please note that the download of the Cover Page is acknowledgment of its receipt. If the Cover Page cannot be located or other questions arise, please contact Mr. Joseph Bredekamp at (202) 358-2348 (e-mail: jbredkamp@hq.nasa.gov).

Please note that receipt of the Cover Page of a proposal is not sufficient to meet the deadline for proposal submission. Paper copies of proposals must be submitted by the indicated due date, including a Cover Page, as described in this NRA. Questions regarding Cover Page submission should be addressed to:

Applied Information Systems Research Program (AISRP) Support Office
Jorge Scientific Corporation
400 Virginia Avenue, SW, Suite 700
Washington DC 20024
Tel: 202-554-2775

Questions regarding NASA policy should be addressed to:

Mr. Joseph Bredekamp
Office of Space Science
Code SR
NASA Headquarters
Washington, DC 20546-0001 U.S.A.
E-mail: jbredkamp@hq.nasa.gov
Telephone: (202) 358-2348

Comments and suggestions regarding this proposal submission would be appreciated.

9. Evaluation and Selection Process

Proposals that are specific to this NRA will be evaluated for their scientific desirability and technical originality and feasibility by peer review through the mail and then by panels including computer science and space science representatives. Panels may be subdivided, or combined, depending on the number and kinds of proposals received.

A NASA representative will chair a final multidisciplinary-panel review upon completion of the reviews by individual panels to develop a recommendation on the total program. The multidisciplinary-panel review will resolve any discrepancies in the review of investigations spanning more than one research area and arrive at an overall programmatic recommendation across all panels.

A separate review panel (or panels) will evaluate proposals that are not specific to any one research area for their technical merits and usefulness to space science.

The Director of the Research Program Management Division in the NASA Office of Space Science will be the selecting official.

The following criteria, which supersede those listed in Appendix B, will be used in evaluating proposals solicited by this NRA:

- **Scientific Applicability (35%):** The overall applicability of the proposed research to NASA space science programs, and the degree to which the proposed effort is expected to benefit space science investigators in obtaining, accessing, analyzing, or interpreting scientific data.
- **Technical (35%):** The originality and innovative nature of the proposed technical approach, the degree to which the computer science and technology aspects of the proposed research approach the state-of-the-art, and the technical feasibility of accomplishing the stated scientific goals or services.
- **Cost (15%):** The total realism and reasonableness of the proposed cost, as well as any cost sharing or support by the institution(s) of the investigator(s) or by other sources to the proposed effort; the commitment of the institution(s) of the investigator(s) as measured by willingness to provide the necessary support to ensure the satisfactory completion of the investigation or delivery of the proposed products.
- **Other Factors (15%):** Programmatic considerations; the time and attention the PI plans to devote personally to the investigation, management plan, personnel, and the competence and relevant experience of the PI and any collaborators, as an indication of their ability to carry the investigation to a successful conclusion, including timely publication of the research in peer-reviewed journals and/or delivery of proposed products.

10. Other Conditions

NASA may select only a portion of a proposer's investigation, in which case the investigator will be given the opportunity to accept or decline such partial acceptance.

As previously stated, proposals should capitalize on either existing research and development activities or tools and capabilities that are available commercially or with the public domain which can be adapted for application in the NASA space science environment. Because one of NASA's objectives is to make resulting software available free of charge to the scientific community, proposers must be able to obtain the necessary licenses to any intellectual property that is used in furtherance of this objective.

11. Schedule

The schedule for the review and selection of proposals for this NRA is as follows:

May 28, 1996	Release of the NRA
August 28, 1996	Proposals due
November 1, 1996	Target date for selection announcements

NASA will contact both successful and unsuccessful proposers directly.

Forms for Use in Preparing Proposals in Response to this NRA

Enclosed in this Appendix is a list of the forms that should be used in preparing proposals responding to this NRA (copies of all forms, except the Cover Pages, are available by anonymous ftp from <ftp://ftp.hq.nasa.gov/pub/oss/aisrpnra/96-OSS-10/>);

1. Standard Cover Pages (available at the World Wide Site http://www.Code_S_Proposals.hq.nasa.gov/)
2. Summary Budget Form
3. Additional, Detailed, Budget Form
4. Current and Pending Federal Support Form
5. Certification Forms (Drug-Free Workplace, Debarment and Suspension, and Lobbying)

Please prepare your proposal in the following format:

Standard Cover Pages

Summary Budget

Additional, Detailed, Budget

Current and Pending Federal Support

Certifications

Table of Contents

1. Scientific/Technical Statement of Work including a Summary of the Proposed Science Program
2. Implementation Plan
3. Data Requirements
4. Supporting Facilities
5. Biographical Sketches
6. Bibliography
7. Administrative Information

COVER PAGES

Applied Information Systems Research

Principal Investigator			
<i>Title</i>	<i>First Name</i>	<i>Middle Name</i>	<i>Last Name</i>
Department			
Company/Institution			
Street Address		City/Town	
State/County		Zip/Postal	Country
Telephone		Fax	E-mail
Principal Investigator's Signature		Date	

Proposal Title				
Computer Science/Information Systems Applications Research Area(s):		Space Science Theme Application Area(s):		
<input type="checkbox"/> A. High Performance Computing and Networking <input type="checkbox"/> B. Scientific Data Analysis and Visualization <input type="checkbox"/> C. Scientific Data Storage and Management <input type="checkbox"/> D. Software Technology including World Wide Web Tools		<input type="checkbox"/> A. Structure and Evolution of the Universe <input type="checkbox"/> B. Astronomical Search for Origins and Planetary Systems <input type="checkbox"/> C. Solar System Exploration <input type="checkbox"/> D. The Sun-Earth Connection		
Fill in percentage (up to 100%)				
Co-Investigator(s):				
<i>Full Name</i>	<i>Institution</i>	<i>Phone</i>	<i>Fax</i>	<i>E-mail</i>

COVER PAGES (continued)

Principal Investigator

*Title**First Name**Middle Name**Last Name*

Proposal Title

Abstract (200 to 300 words)

Authorizing Institutional Official's Endorsement

Typed Name and Title

Full Address

Telephone

Signature

Date

Budget Summary

	Year One	Year Two	Year Three	Total
Amount Requested				

GRANT / CONTRACT / RTOP # _____

SUMMARY BUDGET FOR ALL YEARS

TITLE: _____

PRINCIPAL INVESTIGATOR: _____

DURATION REQUESTED: _____ YEARS

START DATE: _____ END DATE: _____

SUMMARY OF FULL PROPOSED COSTS: (nearest \$ 0.1 K)

1.	SALARIES AND WAGES	\$ _____
2.	FRINGE BENEFITS	\$ _____
3.	SUPPLIES AND MATERIALS	\$ _____
4.	EQUIPMENT PURCHASES	\$ _____
5.	COMPUTER TIME (paid with PI funds)	\$ _____
6.	OTHER SERVICES	\$ _____
7.	PUBLICATIONS AND COMMUNICATIONS	\$ _____
8.	TRAVEL	\$ _____
9.	OTHER	\$ _____
10.	SUBTOTAL (ITEMS 1 - 9)	\$ _____
11.	OVERHEAD (INDIRECT COSTS)	\$ _____
12.	SUBTOTAL FULL DURATION BUDGET (LINES 10 + 11)	\$ _____
13.	INSTITUTIONAL CONTRIBUTIONS	\$ _____
14.	CARRYOVER FROM PREVIOUS YEAR	\$ _____
15.	TOTAL FUNDS REQUESTED FOR ALL YEARS FROM NASA (LINE 12 MINUS LINES 13 + 14)	\$ _____

SUMMARY OF FUNDING REQUEST (NEAREST 0.1 WORK YEAR, NEAREST \$0.1K)

1.	SENIOR PERSONNEL	_____ wy	\$ _____
2.	TECHNICAL SUPPORT	_____ wy	\$ _____
3.	OTHER	_____ wy	\$ _____
4.	TOTALS	_____ wy	\$ _____

GRANT/CONTRACT NO./TOP # _____

BUDGET SUMMARY FOR YEAR _____
(PROVIDE ONE SHEET FOR EACH YEAR OF REQUESTED FUNDING)

TITLE:

PRINCIPAL INVESTIGATOR & INSTITUTION:

SUMMARY OF FULL PROPOSED COSTS: (nearest \$ 0.1 K)

1.	SALARIES AND WAGES	\$ _____
2.	FRINGE BENEFITS	\$ _____
3.	SUPPLIES AND MATERIALS	\$ _____
4.	EQUIPMENT PURCHASES	\$ _____
5.	COMPUTER TIME (paid with PI funds)	\$ _____
6.	OTHER SERVICES	\$ _____
7.	PUBLICATIONS AND COMMUNICATIONS	\$ _____
8.	TRAVEL	\$ _____
9.	OTHER	\$ _____
10.	SUBTOTAL (ITEMS 1 - 9)	\$ _____
11.	OVERHEAD (INDIRECT COSTS)	\$ _____
12.	SUBTOTAL BUDGET (LINES 10 + 11)	\$ _____
13.	INSTITUTIONAL CONTRIBUTIONS	\$ _____
14.	CARRYOVER FROM PREVIOUS YEAR	\$ _____
15.	TOTAL FUNDS REQUESTED FOR ALL YEARS FROM NASA (LINE 12 MINUS LINES 13 + 14)	\$ _____

SUMMARY OF FUNDING REQUEST (NEAREST 0.1 WORK YEAR, NEAREST \$0.1K)

TASK/SHORT TITLE	SENIOR PERSONNEL	TECHNICAL SUPPORT	OTHER COSTS
1. _____	_____ wy/\$	_____ wy/\$	\$ _____
2. _____	_____ wy/\$	_____ wy/\$	\$ _____
3. _____	_____ wy/\$	_____ wy/\$	\$ _____
4. _____	_____ wy/\$	_____ wy/\$	\$ _____

**CURRENT AND PENDING RESEARCH SUPPORT
FROM ALL OTHER SOURCES**

This list should include all current and pending research support from the following sources:

1. Any proposal for which the PI of this proposal is also the Principal Investigator.
2. Any proposal, regardless of the PI, which accounts for more than 25% of the time of the Principal Investigator of this proposal and other personnel essential to this proposal.

Please provide this information in the following format:

I. Name of Principal Investigator

A. Current FY 96 Support

B. Pending Proposals (Excluding this proposal but including other proposals).

For both current and pending support provide information on:

1. Source of Support and Principal Investigator
2. Project Title and Short Abstract (50 words or less)
3. Award Amount and Period of Performance
4. Person-Months and Level of Effort

II. Names of Co-Investigators

As outlined above, provide information on all Current and Pending Support. Collaborators are not considered essential to the proposal. Disclosure of current and pending research support is not required for collaborators.

III. Other agencies to which this proposal, or parts thereof, has been submitted.

Certification Regarding Drug-Free Workplace Requirements Grantees Other Than Individuals

This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85, Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or governmentwide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

This grantee certifies that it will provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing a drug-free awareness program to inform employees about -
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will -
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;
- (e) Notifying the agency within ten days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction;
- (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted -
 - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraph (a), (b), (c), (e), and (f).

Organization Name

PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature

Date

ED 80-0004

**Certification Regarding
Debarment, Suspension, and Other Responsibility Matters
Primary Covered Transactions**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participant's responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). Copies of the regulation may be obtained by contracting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, DC. 20202-4725, telephone (202) 732-2505.

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature

Date

ED Form GCS-008 (REV.12/88)

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000 for each such failure.

Signature and Date

Name and Title of Authorized Representative

Organization Name

NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

MUST CHECK ONE:

Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)
☐ 2. Announcements of Opportunity (specific space flight mission)

Must check one, please include code number from mailing label:

- ☐ 1. Please add my name to the mailing list.
☐ 2. Please remove my name from the mailing list (please attach mailing label)
☐ 3. Please update my current listing.

CONTACT INFORMATION

If your address has changed or your mailing label is incorrect, please provide COMPLETE contact information.

Code Number: (please from mailing label)	<input type="text"/>	Salutation: (Mr., Mrs., Ms., Dr., Prof., etc.)	<input type="text"/>	Suffix (Ret., PhD., Jr., III, etc.)	<input type="text"/>
First Name:	<input type="text"/>	MI:	<input type="text"/>	Last Name:	<input type="text"/>
Organization:	<input type="text"/>				
Division / Department:	<input type="text"/>				
Street:	<input type="text"/>				
City:	<input type="text"/>	State:	<input type="text"/>	Zip:	<input type="text"/>
Telephone No:	<input type="text"/>	Fax No:	<input type="text"/>		
E-Mail Address:	<input type="text"/>		Internet Address:	<input type="text"/>	
Country: (foreign addresses, please specify)	<input type="text"/>				

Institution Type

(check only those that apply)

- | | | |
|--|---|---|
| <input type="checkbox"/> 1. College or University | <input type="checkbox"/> 4. Minority Business | <input type="checkbox"/> 7. Other Government Agency |
| <input type="checkbox"/> 2. Minority College or University | <input type="checkbox"/> 5. NASA HQs/Center | <input type="checkbox"/> 8. Private Industry |
| <input type="checkbox"/> 3. Foreign Addressee | <input type="checkbox"/> 6. Nonprofit Corporation | <input type="checkbox"/> 9. Small Business |

Societies:

- ☐ A. American Astronomical Society ☐ B. American Geophysical Union ☐ C. Others _____

Discipline:

MUST CHECK ATLEAST ONE

(check only those that apply)

1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
☐ B. Instrumentation (Technology Dev)
☐ C. Laboratory Astrophysics
☐ D. Data Analysis (Archival)
☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
☐ B. Planetary Materials and Geochemistry
☐ C. Planetary Geology and Geophysics
☐ D. Instrument Development
☐ E. Origins of Solar Systems
☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
☐ B. Solar Physics
☐ C. Magnetospheric Physics
☐ D. Ion-Thermo-Magnetospheric Physics

4. Information Systems/Computer Science

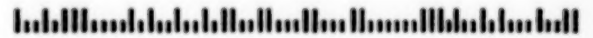
- ☐ A. High Performance Computing and Networking
☐ B. Scientific Data Analysis and Visualization
☐ C. Science Data Storage and Management
☐ D. Software Technology

Please Tape (Do not staple)



PLACE STAMP
HERE
POST OFFICE
WILL NOT
DELIVER
WITHOUT PROPER
POSTAGE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
OFFICE OF SPACE SCIENCE
MAIL CODE SPI
WASHINGTON, DC 20546-0001



NASA OFFICIAL MAILING LIST UPDATE

END

01-15-97